SANTA CRUZ BIOTECHNOLOGY, INC.

Calgranulin B siRNA (m): sc-43345

BACKGROUND

The family of EF-hand type Ca^{2+}-binding proteins includes Calbindin (previously designated vitamin D-dependent Ca^{2+}-binding protein), S-100α and β, Calgranulin A (also designated MRP8), Calgranulin B (also designated MRP14) and Calgranulin C (S-100 like protein), and the parvalbumin family members, including parvalbumin α and parvalbumin β (also designated oncomodulin). Calbindin, S-100 proteins and parvalbumin proteins are each expressed in neural tissues. In addition, S-100α and β are present in a variety of other tissues, and Calbindin is present in intestine and kidney. Parvalbumin α is also found in fast-contracting/relaxing skeletal muscle fibers and parvalbumin β is found in many tumor tissues as well as in the organ of Corti. Calbindin, S-100 proteins and parvalbulmins have all been detected in leydig cells and testis. These proteins are thought to play a role in hormone production and spermatogenesis. Calgranulin is expressed in macrophages and epithelial cells.

REFERENCES

1. van Heyningen, V., et al. 1985. Tissue localization and chromosomal assignment of a serum protein that tracks the cystic fibrosis gene. Nature 315: 513-515.
2. Hayward, C., et al. 1986. Monoclonal antibodies to cystic fibrosis antigen. J. Immunol. Methods 91: 117-122.
3. Pfyffer, G.E., et al. 1987. Developmental and functional studies of parvalbumin and Calbindin D28K in hypothalamic neurons grown in serum-free medium. J. Neurochem. 49: 442-451.
4. Kagi, U., et al. 1988. Developmental appearance of the Ca^{2+}-binding proteins parvalbumin, Calbindin D-28K, S-100 proteins and calmodulin during testicular development in the rat. Cell Tissue Res. 252: 359-365.
5. Wilkinson, M.M., et al. 1988. Expression pattern of two related cystic fibrosis-associated calcium-binding proteins in normal and abnormal tissues. J. Cell Sci. 91: 221-230.
6. Zimmer, D.B., et al. 1991. Isolation of a rat S100 α cDNA and distribution of its mRNA in rat tissues. Brain Res. Bull. 27: 157-162.

CHROMOSOMAL LOCATION

Genetic locus: S100a9 (mouse) mapping to 3 F1.

PRODUCT

Calgranulin B siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Calgranulin B shRNA Plasmid (m): sc-43345-SH and Calgranulin B shRNA (m) Lentiviral Particles: sc-43345-V as alternate gene silencing products.

For independent verification of Calgranulin B (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-43345A, sc-43345B and sc-43345C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Calgranulin B siRNA (m) is recommended for the inhibition of Calgranulin B expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Calgranulin B (47-8D3): sc-58706 is recommended as a control antibody for monitoring of Calgranulin B gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Ichikawa, M., et al. 2011. S100A8/A9 activate key genes and pathways in colon tumor progression. Mol. Cancer Res. 9: 133-148.
2. Wang, H., et al. 2020. IL-6 promotes collagen-induced arthritis by activating the NLRP3 inflammasome through the cathepsin B/S100A9-mediated pathway. Int. Immunopharmacol. 88: 106985.
3. Liu, X., et al. 2024. S100A9 deletion in microglia/macrophages ameliorates brain injury through the STAT6/PPARγ pathway in ischemic stroke. CNS Neurosci. Ther. 30: e14881.

RESEARCH USE

For research use only, not for use in diagnostic procedures.